

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) In a client system, a method for enhancing navigation of a video, comprising:

receiving a video as it is streamed from a server over a computer network;

receiving a first user request to display a first navigation video strip on a display device, wherein the first navigation video strip comprises a first plurality of video frames from the video;

in response to the first user request, obtaining first instructions for displaying the first navigation video strip, wherein the first instructions do not include the first plurality of video frames;

obtaining the first plurality of video frames by requesting [[the]] specific video frames from the server by sending from the client system separate play requests for the specific video frames in accordance with a video streaming protocol, wherein a normal play time of each play request begins at T_i and ends at $T_i + d$, wherein T_i is a timestamp of an i^{th} video frame, and wherein d does not exceed one frame duration and the first plurality of video frames, which are used to display corresponding thumbnail images for the first navigation video strip, are identified after streaming the video from the server has commenced;

determining whether each obtained video frame of the first plurality of video frames is an intra-coded frame or a predictive-coded frame, and for each obtained video frame that is a predictive-coded frame, discarding the obtained video frame and obtaining a subsequent intra-coded frame;

displaying the first navigation video strip on the display device in accordance with the first instructions, wherein displaying the first navigation video strip comprises

- retrieving the first plurality of video frames from the server and displaying the corresponding thumbnail images; and
- receiving user input about a location where the first navigation video strip is displayed and displaying the first navigation video strip on the display device in accordance with the user input.
2. (Original) The method of claim 1, wherein obtaining the first instructions comprises generating the first instructions.
 3. (Original) The method of claim 1, wherein obtaining the first instructions comprises transmitting a first client request to the server to generate the first instructions.
 4. (Original) The method of claim 3, wherein obtaining the first instructions further comprises receiving the first instructions from the server.
 5. (Original) The method of claim 3, wherein obtaining the first instructions further comprises receiving a reference to the first instructions from the server.
 6. (Previously Presented) The method of claim 1, wherein the first instructions are formatted according to a Synchronized Multimedia Integration Language.
 7. (Canceled)
 8. (Previously Presented) The method of claim 1, wherein the first plurality of video frames are retrieved from the server in accordance with a Real Time Streaming Protocol (RTSP), and wherein requesting the specific video frames from the server comprises sending a separate RTSP PLAY request for each of the video frames.

9. (Original) The method of claim 1, further comprising supporting user interaction with the first navigation video strip.

10. (Original) The method of claim 9, wherein supporting the user interaction comprises:
receiving a user selection of one of the first plurality of video frames; and
in response to the user selection, playing the video on the display device beginning at the selected video frame.

11. (Original) The method of claim 9, wherein the amount of time separating adjacent video frames in the first navigation video strip is substantially equal to a first time interval, and wherein supporting the user interaction comprises:

receiving a second user request to modify the first time interval to a second time interval;
in response to the second user request, obtaining second instructions for displaying a second navigation video strip, wherein the amount of time separating adjacent video frames in the second navigation video strip is substantially equal to the second time interval; and
displaying the second navigation video strip in accordance with the second instructions.

12. (Original) The method of claim 1, wherein the method further comprises receiving user input about the number of video frames that are included in the first navigation video strip.

13. (Original) The method of claim 1, wherein the method further comprises receiving user input about the number of video frames in the first navigation video strip that are displayed on the display device.

14–16. (Canceled)

17. (Previously Presented) The method of claim 52, wherein the option is selected from the group consisting of playing the video, pausing the video, and stopping the video.

18. (Currently Amended) In a server system, a method for enhancing navigation of a video, comprising:

streaming a video to a client over a computer network;

receiving a first client request to generate first instructions for displaying a first navigation video strip on a display device, wherein the first navigation video strip comprises a first plurality of video frames from the video for displaying corresponding thumbnail images;

generating the first instructions, wherein the first instructions do not include the first plurality of video frames;

providing the first plurality of video frames to the client by receiving and responding to requests for [[the]] specific video frames from the client, wherein receiving the requests for the specific video frames comprises receiving separate play requests for the specific video frames in accordance with a video streaming protocol, wherein a normal play time of each play request begins at T_i and ends at $T_i + d$, wherein T_i is a timestamp of an i^{th} video frame, and wherein d does not exceed one frame duration and the first plurality of video frames, which are used to display the corresponding thumbnail images for the first navigation video strip, are identified after streaming the video to the client has commenced; and

determining whether each obtained video frame of the first plurality of video frames is an intra-coded frame or a predictive-coded frame, and for each obtained video frame that is a predictive-coded frame, discarding the obtained video frame and obtaining a subsequent intra-coded frame.

19. (Original) The method of claim 18, further comprising transmitting the first instructions to the client.

20. (Original) The method of claim 18, further comprising transmitting a reference to the first instructions to the client.

21. (Currently Amended) A client system configured to facilitate enhanced navigation of a video, comprising:

- a processor;

- memory in electronic communication with the processor;

- a video player configured to:

- receive a video as it is streamed from a server over a computer network;

- receive a first user request to display a first navigation video strip on a display device, wherein the first navigation video strip comprises a first plurality of video frames from the video;

- obtain first instructions for displaying the first navigation video strip, wherein the first instructions do not include the first plurality of video frames;

- obtain the first plurality of video frames by requesting [[the]] specific video frames from the server by sending from the client system separate play requests for the specific video frames in accordance with a video streaming protocol, wherein a normal play time of each play request begins at T_i and ends at $T_i + d$, wherein T_i is a timestamp of an i^{th} video frame, and wherein d does not exceed one frame duration and the first plurality of video frames, which are used to display corresponding thumbnail images for the first navigation video strip, are identified after streaming the video from the server has commenced;

- determining whether each obtained video frame of the first plurality of video frames is an intra-coded frame or a predictive-coded frame, and for each obtained video frame that is a predictive-coded frame, discarding the obtained video frame and obtaining a subsequent intra-coded frame;

- display the first navigation video strip on the display device in accordance with the first instructions, wherein displaying the first navigation video strip comprises

- retrieving the first plurality of video frames from the server and displaying the corresponding thumbnail images; and
- receiving user input about a location where the first navigation video strip is displayed and displaying the first navigation video strip on the display device in accordance with the user input.
22. (Original) The client system of claim 21, further comprising a video strip generator that generates the first instructions in response to the first user request, and wherein obtaining the first instructions comprises receiving the first instructions from the video strip generator.
23. (Original) The client system of claim 21, wherein obtaining the first instructions comprises transmitting a first client request to the server to generate the first instructions.
24. (Original) The client system of claim 23, wherein obtaining the first instructions further comprises receiving the first instructions from the server.
25. (Original) The client system of claim 23, wherein obtaining the first instructions further comprises receiving a reference to the first instructions from the server.
26. (Previously Presented) The client system of claim 21, wherein the first instructions are formatted according to a Synchronized Multimedia Integration Language.
27. (Canceled)
28. (Previously Presented) The client system of claim 21, wherein the first plurality of video frames are retrieved from the server in accordance with a Real Time Streaming Protocol (RTSP), and wherein requesting the specific video frames from the server comprises sending a separate RTSP PLAY request for each of the video frames.

29. (Previously Presented) The client system of claim 21, wherein the video player is further configured to support user interaction with the first navigation video strip.

30. (Original) The client system of claim 29, wherein supporting the user interaction comprises:

receiving a user selection of one of the first plurality of video frames; and
in response to the user selection, playing the video on the display device beginning at the selected video frame.

31. (Original) The client system of claim 29, wherein the amount of time separating adjacent video frames in the first navigation video strip is substantially equal to a first time interval, and wherein supporting the user interaction comprises:

receiving a second user request to modify the first time interval to a second time interval;
in response to the second user request, obtaining second instructions for displaying a second navigation video strip, wherein the amount of time separating adjacent video frames in the second navigation video strip is substantially equal to the second time interval; and
displaying the second navigation video strip on the display device in accordance with the second instructions.

32. (Previously Presented) The client system of claim 21, wherein the video player is further configured to receive user input about the number of video frames that are included in the first navigation video strip.

33. (Previously Presented) The client system of claim 21, wherein the video player is further configured to receive user input about the number of video frames in the first navigation video strip that are displayed on the display device.

34–36. (Canceled)

37. (Previously Presented) The client system of claim 54, wherein the option is selected from the group consisting of playing the video, pausing the video, and stopping the video.

38. (Currently Amended) A server system configured to facilitate enhanced navigation of a video, comprising:

a processor;

memory in electronic communication with the processor;

a video stream server configured to stream a video to a client over a computer network;

and

a video strip generator configured to:

receive a first client request to generate first instructions for displaying a first

navigation video strip that comprises a first plurality of video frames from

the video for displaying corresponding thumbnail images;

generate the first instructions, wherein the first instructions do not include the first

plurality of video frames;

provide the first plurality of video frames to the client by receiving and responding to

requests for ~~[[the]]~~ specific video frames from the client, wherein receiving the

requests for the specific video frames comprises receiving separate play requests

sent by the client for the specific video frames in accordance with a video

streaming protocol, wherein a normal play time of each play request begins at T_i

and ends at $T_i + d$, wherein T_i is a timestamp of an i^{th} video frame, and wherein d

does not exceed one frame duration and the first plurality of video frames, which

are used by the client to display the corresponding thumbnail images for the first

navigation video strip, are identified after streaming the video to the client has

commenced; and

determining whether each obtained video frame of the first plurality of video frames is an intra-coded frame or a predictive-coded frame, and for each obtained video frame that is a predictive-coded frame, discarding the obtained video frame and obtaining a subsequent intra-coded frame.

39. (Previously Presented) The server system of claim 38, wherein video strip generator is further configured to transmit the first instructions to the client.

40. (Previously Presented) The server system of claim 38, wherein the video strip generator is further configured to transmit a reference to the first instructions to the client.

41. (Currently Amended) A non-transitory computer-readable medium comprising a set of instructions executable to:

receive a request to generate video strip instructions for displaying a navigation video strip that comprises a plurality of video frames from a video that is being streamed from a server to a client over a computer network, wherein the plurality of video frames that are included in the navigation video strip are independent of a current playback position of the video, and wherein the plurality of video frames from the server correspond to thumbnail images;

in response to the request, generate the video strip instructions while the video is being streamed from the server to the client, wherein the video strip instructions comprise instructions for sending from the client separate play requests for the plurality of video frames in the navigation video strip in accordance with a video streaming protocol, wherein a normal play time of each play request begins at T_i and ends at $T_i + d$, wherein T_i is a timestamp of an i^{th} video frame, and wherein d does not exceed one frame duration and the plurality of video frames, which are used by the client to display the thumbnail images for the navigation video strip, are identified after streaming the video from the server has commenced; and

determining whether each obtained video frame of the first plurality of video frames is an intra-coded frame or a predictive-coded frame, and for each obtained video frame that is a predictive-coded frame, discarding the obtained video frame and obtaining a subsequent intra-coded frame.

42. (Previously Presented) The computer-readable medium of claim 41, wherein the set of instructions is further executable to provide the video strip instructions to a video player.

43. (Previously Presented) The computer-readable medium of claim 41, wherein the set of instructions is further executable to provide a reference to the video strip instructions to a video player.

44. (Previously Presented) The computer-readable medium of claim 41, wherein the set of instructions is further executable to receive user input about the number of video frames that are included in the navigation video strip.

45. (Previously Presented) The computer-readable medium of claim 41, wherein the set of instructions is further executable to receive user input about the number of video frames in the navigation video strip that are displayed on a display device.

46–48. (Canceled)

49. (Previously Presented) The computer-readable medium of claim 56, wherein the option is selected from the group consisting of playing the video, pausing the video, and stopping the video.

50. (Previously Presented) The method of claim 1, wherein the first plurality of video frames are retrieved from the server in accordance with a Real Time Streaming Protocol (RTSP), and

wherein requesting the specific video frames from the server comprises sending an RTSP PAUSE request following by an RTSP PLAY request.

51. (Previously Presented) The method of claim 1, wherein the first instructions comprise a Synchronized Multimedia Integration Language (SMIL) document.

52. (Previously Presented) The method of claim 1, further comprising:
receiving a user selection of an option concerning how the video is managed while the first navigation video strip is displayed, wherein the option is selected from the group consisting of cropping the video and alpha-blending the video with the first navigation video strip.

53. (Previously Presented) The method of claim 18, further comprising:
receiving a user selection of an option concerning how the video is managed while the first navigation video strip is displayed, wherein the option is selected from the group consisting of cropping the video and alpha-blending the video with the first navigation video strip.

54. (Previously Presented) The client system of claim 21, wherein the video player is further configured to:
receive a user selection of an option concerning how the video is managed while the first navigation video strip is displayed, wherein the option is selected from the group consisting of cropping the video and alpha-blending the video with the first navigation video strip.

55. (Previously Presented) The server system of claim 38, wherein the video strip generator is further configured to:

receive a user selection of an option concerning how the video is managed while the first navigation video strip is displayed, wherein the option is selected from the group consisting of cropping the video and alpha-blending the video with the first navigation video strip.

56. (Previously Presented) The computer-readable medium of claim 41, wherein set of instructions is further executable to:

receive a user selection of an option concerning how the video is managed while the first navigation video strip is displayed, wherein the option is selected from the group consisting of cropping the video and alpha-blending the video with the first navigation video strip.